Spark Gap

On Our MARC:

I would like to thank all those that came out for the Strawberry Fest. We had about 14 members that came out to show support. Every one there seemed to be enjoying the day. The bands were okay. I know Tim had 25 contacts, I had one and not sure how many contacts Ron, Chris and Jack. The weather held out and we had a nice breeze. Nothing like last year when we closed down early due to storms in the area.

 Next on our agenda is Field Day. Field Day will be June 22 and 23. We will start setting up about noon and be ready to get on the air at 2pm. We will run for 24 hours as we have a few people that plan on working the night shift. Both days will be held down at our radio room.

July and August will be quite for us. After June, our next event isn't until Sept 8th which is Heartnut Fest, if we want to participate in it. At this time, I have no new information on it. Hopefully, next month we will have information.

Our speaker this month is a surprise at this time but I know we have one. Come to the meeting to see who the speaker is.

See you Saturday. Coffee will be on.

Jacki-KI6QOG
President

What is ARRL Field Day?

ARRL Field Day is the single most popular on-the-air event held annually in the US and Canada. On the fourth weekend of June of each year, more than 35,000 radio amateurs gather with their clubs, groups or simply with friends to operate from remote locations.

Field Day is a picnic, a campout, practice for emergencies, an informal contest and, most of all, FUN!

It is a time where many aspects of Amateur Radio come together to highlight our many roles. While some will treat it as a contest, other groups use the opportunity to practice their emergency response capabilities. It is an excellent opportunity to demonstrate Amateur Radio to the organizations that Amateur Radio might serve in an emergency, as well as the general public. For many clubs, ARRL Field Day is one of the highlights of their annual calendar.

The contest part is simply to contact as many other stations as possible and to learn to operate our radio gear in abnormal situations and less than optimal conditions.

We use these same skills when we help with events such as marathons and bike-a-thons; fund-raisers such as walk-a-thons; celebrations such as parades; and exhibits at fairs, malls and museums — these are all large, preplanned, non-emergency activities.

But despite the development of very complex, modern communications systems — or maybe because they ARE so complex — ham radio has been called into action again and again to provide communications in crises when it really matters. Amateur Radio people (also called "hams") are well known for our communications support in real disaster and post-disaster situations.

What is the ARRL?
The American Radio Relay League is the national association for Amateur Radio in the USA, representing over 170,000 FCC-licensed Amateurs. The ARRL is the primary source of information about what is going on in ham radio. It provides books, news, support and information for individuals and clubs, special events, continuing education classes and other benefits for its members.

What is Amateur Radio
Often called "ham radio," the Amateur Radio Service has been around for a century. In that time, it's grown into a worldwide community of licensed operators using the airwaves with every conceivable means of communications technology. Its people range in age from youngsters to grandparents. Even rocket scientists and a rock star or two are in the ham ranks. Most, however, are just normal folks like you and me who enjoy learning and being able to transmit voice, data and pictures through the air to unusual places, both near and far, without depending on commercial systems.

The Amateur Radio frequencies are the last remaining place in the usable radio spectrum where you as an individual can develop and experiment with wireless communications. Hams not only can make and modify their equipment, but can create whole new ways to do things.

For More Information visit: www.arrl.org

Updated 2/2019

New FT4 Beta Release "Leaps and Bounds" Better than Earlier Iterations

The *WSJT-X* Development Group released yet another new beta version of the FT4 protocol this week, and *WSJT-X* 2.1.0-rc7 is now available for testing. Developers point out that the FT4 included in this "release candidate 7" version is not compatible with any previous releases. A short mock contest session to wring out the contesting features of FT4 took place on June 4.

"Thanks to all who participated in yesterday's FT4 mock-contest practice session -- and especially to those who provided useful feedback. It is much appreciated!" said developer Joe Taylor, K1JT. "Everyone likes the 7.5-second T/R sequences, which provide operators with significantly more human interaction time than in previous revisions of FT4. Users also appreciated the sensitivity improvements and a larger range of acceptable time offsets (DT)." DT represents the combined clock difference for the transmitting and receiving computers, he explained.

Based on data compiled by Steve Franke, K9AN, Taylor said that it appears developers have the *WSJT-X* timing behavior under good control on all supported platforms, and the range of measured signal-to-noise values extended down to -21 dB.

"I operated for about 3 hours using 100 W and a dipole," Taylor recounted. "I copied transmissions from 263 unique call signs and made 143 QSOs in 29 states, 5 Canadian provinces, and 15 DXCCs."

Taylor said the developers anticipate addressing all remaining issues they're aware of. "I believe we are on a good path toward a General Availability (GA) release of *WSJT-X* 2.1.0 by mid-July," he said.

"This new version of FT4 is leaps and bounds better than before," said Mike Black, W9MDB, in a June 4 post to the Yahoo WSJT Meteor Scatter and Weak Signal Group. "I worked almost everybody I could see without any repeats. Seems like we have a winner here."

Changes, improvements, and bug fixes that have been made since *WSJT-X* 2.1.0-rc5 include:

Steve Franke, K9AN, of the *WSJT-X* Development Group spent most of his time observing during the mock contest on June 4, decoding some 25,300 FT4 transmissions. This chart represents signal-to-noise ratios reported.
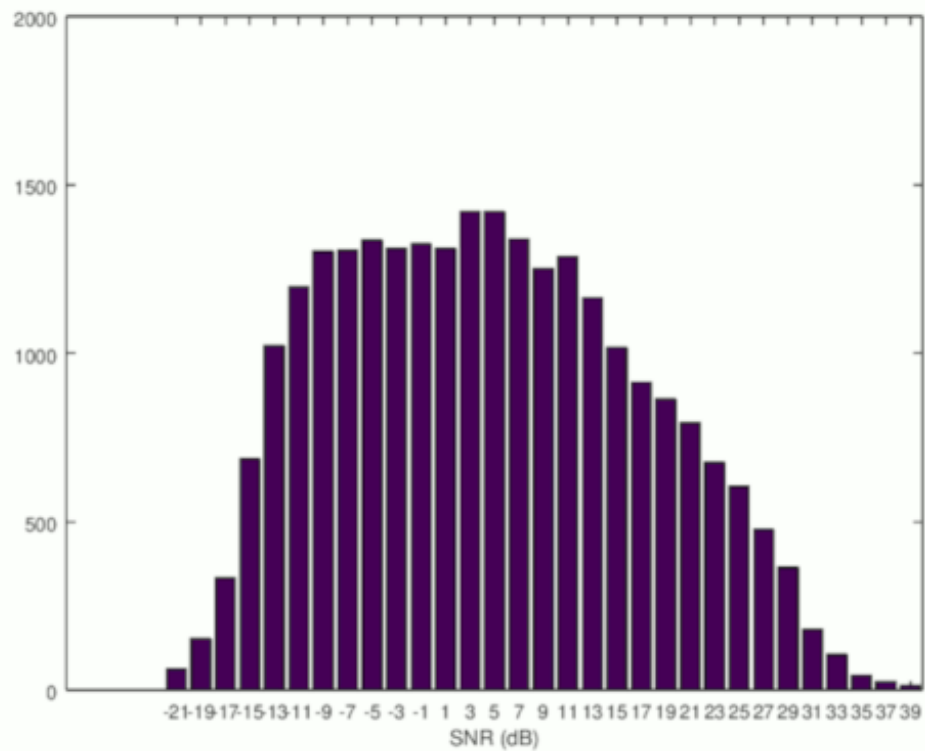
- T/R sequence length increased from 6.0 to 7.5 seconds.

- Signal bandwidth decreased from 90 Hz to 80 Hz.

- Improved sensitivity: Threshold S/N is now -17.5 dB.

Release candidate *WSJT-X* 2.1.0-rc7 will be available for beta-testing through July 21, and it will *permanently* cease to function after that date. It will *not* be usable during the ARRL June VHF Contest or during ARRL Field Day. Taylor advised using *WSJT-X* 2.0.1 and FT8 for these events.

Downloadable installation packages for *WSJT-X* 2.1.0-rc7 under Windows, Linux, and macOS are available on the *WSJT-X* web page.

Strawberry Fest 2019

Cool temperatures, cloudy skies and the threat of rain showers made for a perfect Strawberry Fest deployment for MARC members. Our 27th year of providing amateur radio demonstrations at the White River Twp Fire Departments annual Strawberry Fest added a little sunshine to the cloudy day. Ron-K9THR, Jack-W8ISH and Tim Albright-KD9MDZ provided lots of radios, antennas and HF action throughout the day. Tim inaugurated his new pop up tent, Icom 7300 Radio and antennas at the event. He made over two dozen HF contacts during the day.

 Ron and a few others added to that total. Jack, working FT8 Digital mode, added a half dozen more contacts. This wasn't a contest but a warm up for Field Day 2019.   Jacki-KI6QOG and Wilson-KD9FBC were kept busy passing out Mid-State ARC pencils to the public.
On hand for the morning set up and to spend the day talking ham radio were Mike-K9OMT, Steve-AF9SE, Bob-N9SIU, Chris-KQ9Y, Bob-KC9MJN, Bernie-KB9AWS, George-WB3LNY, Steve-K9DY, Dave-KB9LOT, Chris-KC9YIA and Noel-W9NMM. Noel demonstrated Wires-X from his nearby Jeep.

Only Ron and Tim brought pop up tents for this event. Fortunately, our Rag Chewers had cloudy skies and cool breezes throughout the day.

Photos-text Jack w8ish

Bob, Dave and Tim antenna work

Bob making contact on DMR

Ron checking the connection on his antenna

Noel making a contact on WIRES – X

Learning about batteries

By Dan Romanchik, KB6NU

I often say that getting an amateur radio license is as much getting a license to learn as it is getting a license to operate on the amateur radio bands. Lately, I've been learning about batteries, LiPo batteries to be exact.

It all started when I purchased a Morserino (http://morserino.info/). The Morserino is a Morse Code learning aid that has a number of unique features. For example, in addition to helping you learn the characters, it's also supposed to help you learn how to copy in your head. It also has a built-in touch keyer function, and a LoRa interface that lets you send and receive code from other Morserino units.
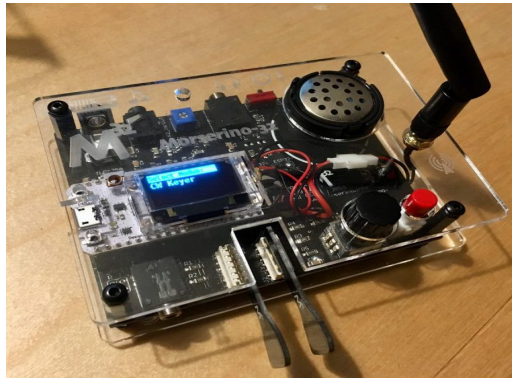
I'll be writing more about the Morserino in a future column, but let's get back to batteries. The kit did not come with a battery. Instead, it was suggested that one purchase a 600 mAh LiPo battery commonly used for powering drones.


Well, sooner than expected, I did find another application for one of the batteries. I'm building a little Arduino project for a client, and I reckon that this, or one with more capacity, will make a great power source for the project.

Now, I have two immediate challenges:
1. Figure out how to charge the battery.
2. Figure out how to connect it to the Arduino.

On the Morserino, the battery plugs directly into a connector on the bottom of the computer board (the white board with the LED display). I knew that connecting the 5V line from the USB connector directly to the battery was a no-no, but I'd lent out the Morserino to a friend, and I didn't have the schematics for the board. So, how they managed to charge the battery from the USB port was a bit of a mystery.

Power supply
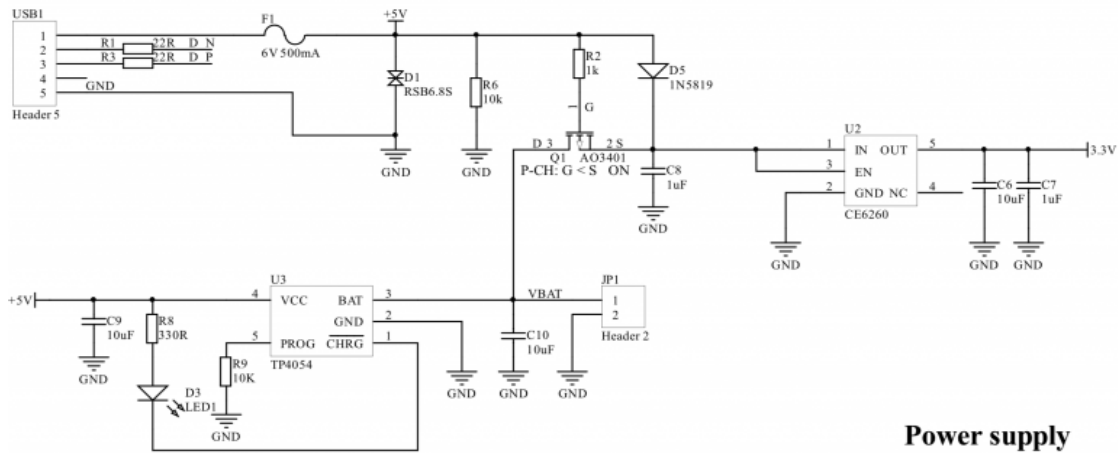
I emailed Willi, OE1WKL, the designer of the Morserino, and he sent me a wealth of information. There actually is a battery-management IC, the TP4054, on the board:

He also gave me the part number for the battery's mating connector. He said, "The mating connector for the Molex connector on the battery is a Molex 51006. It is sometimes referred to by vendors as 51005 female, but 51005 is the connector on the battery." You can, of course, buy pre-made cable assemblies on Amazon (https://www.amazon.com/gp/product/B07P54QTR8).

You can also buy lithium battery charging modules (https://www.amazon.com/gp/product/B01LZSC7I8). These modules have a TP4056 on them, which is similar to the TP4054. It's amazing to me that you can purchase ten of these things for less than seven bucks.

So, that's where I'm at right now. Once I get the modules and cables, I'm going to hook it all up and get the Arduino system running from the battery. The next step will be to integrate a small solar panel and run the whole thing from solar power, hopefully.

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Dan Romanchik, KB6NU, is the author of the KB6NU amateur radio blog (KB6NU.Com), the "No Nonsense" amateur radio license study guides (KB6NU.Com/study-guides/), and one of the hosts of the No Nonsense Amateur Radio Podcast (NoNonsenseAmateurRadio.Com). He often wonders if he can learn things fast enough.

ICE GROUP PULLS PLUG

In the coming months if you venture out of Johnson county and try to trigger any of the W9ICE repeaters you may experience dead air. Fighting physical age, increased costs and future interests the Indianapolis-Carmel-Experimenters group (ICE) is pulling the plug on their network of high profile repeaters. FM and digital repeaters offering voice, APRS, D-Star and cross-band functions will cease to exist by Thanksgiving this year. Many of us have become familiar with the 146.97 and the 442.65 repeaters used for SkyWarn severe weather events. Those are expected to go off the air. For D-Star users the 441.45, 444.125 and the 147.39 machines as well as the 224.98 and a couple of 1.2 gig repeaters will terminate service by this fall.

According to Dale, WB9YCZ, he says, "We have tried to have great coverage system on all the FM bands, 6 meters through 1.2 Gigahertz." Dale says, "Everything has a length of time to exist." The ICE group began building their systems in 1975.
The group is hopeful some younger individuals will step up and take the challenge of providing equipment and fighting for tower space on suitable sites around Central Indiana.
According to Bill-K9YDO, all of the retirees are looking at other interests now and don't want to commit the time, energy or financial costs to continue. This seems to be a growing trend across the county as the amateur radio community moves into retirement creating a critical need for technically qualified younger hams.

This decision will have a profound affect on Hoosier Hams across the state. One of those affected sites is the Freetown, Indiana remote base which links southwestern Indiana communities with the Indianapolis base. For over a decade this link has been vital to the National Weather service in providing Skywarn reports from rural Indiana communities. Bill, K9YDO, says they plan to sell the repeater equipment as each site goes silent in the coming months.

…........................ Jack –w8ish

UP – COMING ACTIVITIES AND HAMFESTS

06/08/2019 -- **White River Twp Fire Dept. annual Strawberry Festival**

06/15/2019 -- **0800 MARC Monthly meeting at the Johnson County REMC.**

06/29/2019 -- **ARRL Field Day location TBA**

07/20/2019 -- **0800 MARC Monthly meeting at the Johnson County REMC.**

Johnson County REMC 750 International Drive Franklin, IN 46131.

08/17/2019 -- **0800 MARC Monthly meeting at the Johnson County REMC.**

Johnson County REMC 750 International Drive Franklin, IN 46131.

**08/24/2019** -- **TBA, Greater Greenwood Community Band Festival Amphitheater, Surina**

Square Greenwood, IN 46142   (Public Safety and Parking)

09/14/2019 -- **TBA Johnson County Heart Nut Festival**

09/21/2019 -- **MARC Monthly Meeting and Annual Picnic, location and time TBA.**

10/19/2019 -- **0800 MARC Monthly meeting at the Johnson County REMC.**

Johnson County REMC 750 International Drive Franklin, IN 46131.
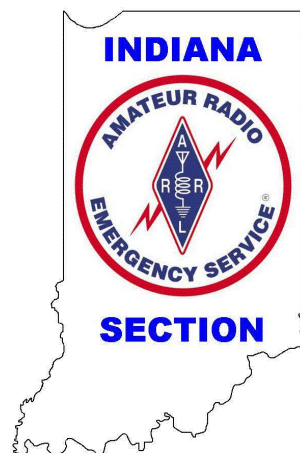
If you would like to be part of Johnson County ARES please contact Bob LaGrange
N9SIU@YAHOO.COM

MID-SATE AMATEUR RADIO CLUB

**The Mid-State Amateur Radio Club meets the THIRD SATURDAY of each month
at the Johnson County REMC 750 International Drive Franklin, IN 46131.**

See our website, www.midstatehams.org, for maps on how to get to our meeting.

Everyone is welcome; you do not have to be a *HAM* to attend our meetings or a member of the club.

WA9RDF Repeater: **Club Officers:**

                                                                          President: Jacki Frederick – KI6QOG
146.835/   **Vice President: Bill Jackson – KM6CRL**
146.235 MHz   **Secretary: Rhonda Curtis – WS9H**
(151.4 Hz PL Tone)   **Treasurer: Ron Scheutz – K9THR**
                                                                          Repeater Trustee - Chris Frederick – KQ9Y

WA9RDF   Repeater:

443.525/
448.525 MHz
(151.4 Hz PL Tone)

Weekly Net: Sunday evening 7:00 PM   ARES/RACES members and <u>ALL RADIO AMATEURS</u>
146.835/146.235 MHz (151.4 Hz PL Tone)

The Official Newsletter of the Mid-State Amateur Radio Club

P.O. Box 836
Franklin, Indiana
46131

Spark Gap Editor: Robert LaGrange N9SIU

Please send your articles to my email: n9siu@yahoo.com no later than the 3rd of the month

Special thanks to Johnson County REMC for the use of their community room for meetings and testing.